

What is claimed is:

1. A method for optically inspecting and evaluating a sample, the method comprising:

5 directing a probe beam towards an objective lens assembly, where the cross-sectional profile of the probe beam is large enough to substantially fill the pupil of the objective lens assembly;

reducing the cross-sectional profile of the portion of the probe beam transmitted by a first half of the pupil; and

10 gathering the reflection of the portion of the probe beam transmitted by the first half of the pupil through the second half of the pupil and gathering the reflection of the portion of the probe beam transmitted by the second half of the pupil through the first half of the pupil.

15 2. A method as recited in claim 1 in which the reducing step is performed using an aperture placed between the objective lens assembly and the sample.

3. A method as recited in claim 1 in which the directing step is performed using a partially reflective beam splitter.

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4. A device for optically inspecting and evaluating a sample, the device comprising:

an objective lens assembly;

25 one or more optical components for directing a probe beam to substantially fill the pupil of the objective lens assembly; and

an aperture positioned to partially occlude a first half of the pupil of the objective, the aperture reducing the cross-sectional profile of a portion of the probe beam that is projected through the first half of the pupil and collected by a second half of the pupil, the aperture also reducing the cross-sectional profile of a portion of the probe beam that is projected through the second half of the pupil and collected by the first half of the pupil.

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5. A device as recited in claim 4 in which the aperture is placed between the objective lens assembly and the sample.

5 6. A device as recited in claim 4 in which the one or more optical components include a partially reflective beam splitter.

7. A method for optically inspecting and evaluating a sample, the method comprising:

10 directing a probe beam to substantially fill the pupil of an objective lens assembly;

partially obscuring a first half of the pupil of the objective lens assembly;

focusing the probe beam on the surface of the sample;

gathering the reflected probe beam; and

15 analyzing the reflected probe beam to evaluate the sample.

8. A method as recited in claim 7 in which the obscuring step is performed using an aperture placed between the objective lens assembly and the sample.

20 9. A method as recited in claim 7 in which the directing step is performed using a partially reflective beam splitter.